REMARKS/ARGUMENTS

Claims 1-21 and 23-24 are pending.

Claims 1, 11-12, and 13 have been amended.

Claim 22 has been cancelled.

Claims 17-21 and 23-24 have been withdrawn.

Support for the amendments is found in the claims and specification (e.g., page 30, lines 18-32; pages 14-15; page 33, lines 24-37; page 24, lines 16-25; and page 25, lines 16-27; page 33-34). No new matter is believed to have been added.

In response to the claim objection, Claims 12 and 13 have been amended to clarify that an amount of the methyl (methyl)acrylate is at least 50% by weight of the total amount of the ethylenically unsaturated monomers E). Claim 1 requires 55-98.99 parts by weight of the ethylenically unsaturated monomers E) in the claimed composition. Claims 12 and 13 require that a specific monomer E), i.e., the methyl (methyl)acrylate of formula (III), was added in the amount of 50% of the total amount of the ethylenically unsaturated monomers E). Thus, claims 12 and 13 further limit claim 1. Applicants request that the rejection be withdrawn.

Claims 1-13 and 16 are rejected under 35 U.S.C. 103(a) over Yamamoto et al., US 5,385,988. Claims 14-15 are rejected under 35 U.S.C. 103(a) over Yamamoto et al. and Owens et al., US 3,793,402. The rejections are traversed because the Yamamoto et al. composite alone or in combination with Owens et al. is produced by a different method and as a result yields a composite different from the claimed composition.

The claimed polymerizable composition is produced by reacting silicon compounds with water and acid, thereby hydrolyzing the alkoxy groups, adding (meth)acrylates, ethylenically unsaturated monomers, and polymers to the hydrolyzed product, and conducting

polymerization, wherein the hydrolyzed alkoxy groups are consumed in binding the formed polymers to glass (see claim 1).

The produced composition is not a composite but is a laminate which does not comprise silica *polycondensates on the surface of the colloidal silica* forming a dispersion of colloidal silica in the radical-polymerizable vinyl compound causing gelation (see Yamamoto et al.). The hydrolyzed alkoxy groups of the functional alkoxysilane of the claimed composition are consumed for binding formed polymers to the silicate glass. Also, the bulk polymerization yields less coarse particles than the colloidal polymerization (see the present specification, page 30, lines 18-32).

The produced composition is used for laminating glass and provides high hail resistance, bond strength, stiffness, gas impermeability, scratch, impact, and chemical resistance and has low density, which is suitable for glazing (see pages 1 and 3-4).

Although Yamamoto et al. describe the components of the composite encompassing the claimed components, the Yamamoto et al. composite is different from the claimed composition.

Specifically, Yamamoto et al. describe producing a composite (not a laminate) which is polymerized between two steel plates (Examples). In the Yamamoto et al. composite, the silica skeleton of a silica polycondensate derived from colloidal silica and a silane compound hydrolyzed and *polycondensed on the surface of the colloidal silica*, and a polymer of a radical-polymerizable vinyl compound form a semi-interpenetrating network structure (col. 2, lines 4-16). The silica polycondensate is produced by hydrolysis and polycondensation of a silane compound (col. 3, lines 3-23). The silica polycondensate is dissolved in the radical-polymerizable vinyl compound (col. 3, lines 18-23). Yamamoto et al. disclose that 0.1 to 2,000 wt. parts of silane compounds is used per 100 parts of the colloidal silica (claim 1).

The colloidal polymerization yields coarse polymer particles (see the present specification, page 30, lines 18-32).

Thus, the Yamamoto et al. composite is a silica polycondensate comprising silane compounds condensed to colloidal particles.

A bulk polymerization process (see claim 1) of the present application is different form the reaction conducted in colloidal silica (see also page 30, lines 18-32 of the present specification). The present specification describes that the bulk polymerization is a polymerization process in which monomers are polymerized without solvent; the polymerization reaction proceeds in bulk. This differs from polymerization in emulsion (known as emulsion polymerization) and polymerization in a dispersion (known as suspension polymerization), in which the organic monomers are suspended in an aqueous phase with protective colloids and/or stabilizers, and relatively coarse polymer particles are formed (page 30, lines 18-32). Thus, the claimed composition is different from the Yamamoto et al. composite.

The components A to C of claim 1 (A is a silane derivative; B is water, and C is an acid) are not condensed to colloidal particles but instead are used in combination merely for hydrolyzing the alkoxy groups of the functional alkoxysilane (and transforming the groups into hydroxyl groups) (see pages 14-15 of the present specification) in order to make the groups accessible for the reaction with the silicate glass. No silica polycondensates forming a dispersion of colloidal silica in the radical-polymerizable vinyl compound causing gelation are formed. In fact, forming silica polycondensates is not even possible in the claimed polymerizable composition because the hydrolyzed silanes are consumed for binding the forming polymers to the silicate glass. Thus, the Yamamoto et al. composite is different form the claimed composition.

Further, the Examiner believes that the Yamomoto et al. composite is formed *after* the polymerizable composition is polymerized and, therefore, the mixture of the components before polymerization is "a polymerizable composition." In response, it is noted that the polymerizable composition of present claim 1 is formed not only by mixing and reacting the components A to C but also by conducting further polymerization with the compounds D, E, and F, wherein the hydrolyzed alkoxy groups of the component A are consumed in binding formed polymers to glass (see claim 1). Thus, the Yamamoto et al. composite which is formed by mixing and polymerizing the components, is "a polymerizable composition" and is different from the claimed laminate glass composition.

Thus, Yamamoto et al. do not describe or suggest the claimed polymerizable composition.

Owens et al. do not cure the deficiency of Yamamoto et al. Owens et al. describe an impact resistant thermoplastic composition comprising a multi-stage sequentially produced polymer (col. 1). The Owens et al. composition comprises homopolymers of an alkyl methacrylate (claim 1; col. 11, lines 35-51). Owens et al. do not describe the claimed polymerizable composition because the Owens et al. composition does not comprise the claimed components and is produced by a different method. Thus, substituting the alkyl methacrylate of Owens et al. into the Yamamoto et al. composite still does not meet what is now claimed.

Applicants request that the rejections be withdrawn.

A Notice of Allowance for all pending claims is requested.

Respectfully submitted,

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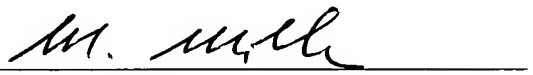

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